IN THE CLAIMS

Claims 1-39 are currently pending in this application. Applicant now cancels claims 16-31, 35-37 and 39 without prejudice or disclaimer of the subject matter thereof.

1. (Original) A lipid phosphatase assay method comprising the steps of: exposing a lipid detector protein containing a lipid recognition motif with a binding specificity for a product lipid of a lipid phosphatase, to a solution containing a substrate lipid of said lipid phosphatase; and determining whether said product lipid is present in said solution.

2. (Original) The lipid phosphatase assay method according to claim 1, wherein the assay is a direct assay or a competitive assay wherein said product lipid has a stronger affinity to said lipid detector protein than said substrate lipid.

3. (Original) The lipid phosphatase assay method according to claim 1, wherein said lipid detector protein is an antibody against said product lipid or a lipid recognition protein(LRP) with specificity for said product lipid.

4. (Original) The lipid phosphatase assay method according to claim 3, wherein said lipid recognition protein contains an affinity tag fusion with PH or other lipid-binding domains.

5. (Original) The lipid phosphatase assay method according to claim 1, wherein said assay is a plate-based assay.

6. (Original) The lipid phosphatase assay method according to claim 5, wherein said assay is an enzyme linked immunosorbent assay (ELISA).

7. (Original) The lipid phosphatase assay method according to claim 1, further comprises: prior to exposing said lipid detector protein to the solution, coating a

substrate of an assay plate with a non-radioactively labeled substrate lipid.

8. (Original) The lipid phosphatase assay method according to claim 7, wherein said assay plate is coated with streptavidin, glutathione or Protein A.

9. (Original) The lipid phosphatase assay method according to claim 1, wherein said assay is an amplified luminescence proximity homogenous assay (ALPHA).

10. (Original) The lipid phosphatase assay method according to claim 1, wherein said assay is a fluorogenic assay.

11. (Original) The lipid phosphatase assay method according to claim 10, wherein the assay is a fluorescence polarization(FP) assay, fluorescence resonance energy transfer(FRET) assay or time-resolved fluorescence resonance energy transfer(TR-FRET) assay.

12. (Original) The lipid phosphatase assay method according to claim 1, wherein additional lipids are present in said solution.

13. (Original) The lipid phosphatase assay method according to claim 1, wherein said lipid phosphatase acts on any PIPn and is a member selected from the group consisting of SHIP1, SHIP2, PTEN, PTPRQ, SKIP, Myotubularin, MTMR2 and OCRL1.

14. (Original) The lipid phosphatase assay method according to claim 1, wherein said substrate lipid is PI(3,4,5)P.sub.3, PI(3,4)P.sub.2, PI(3,5)P.sub.2, PI(4,5)P.sub.2, PI(3)P, PI(4)P, or PI(5)P.

15. (Original) The lipid phosphatase assay method according to claim 1, wherein said product lipid is PI(3,4)P.sub.2, PI(4,5)P.sub.2, PI(3,5)P.sub.2, PI(3)P, PI(4)P, PI(5)P, or Phosphatidyl Inositol.

16. (Cancelled) A lipid phosphatase assay kit comprising: a lipid detector protein containing a lipid recognition motif with a binding specificity for a product lipid of a lipid phosphatase, and a solution containing a substrate lipid of said lipid phosphatase.

17. (Cancelled) The lipid phosphatase assay kit according to claim 16, wherein said assay kit is a direct assay kit or a competitive assay kit wherein said product lipid has a stronger affinity to said lipid detector protein than said substrate lipid.

18. (Cancelled) The lipid phosphatase assay kit according to claim 16, further comprising a multi-well assay plate.

19. (Cancelled) The lipid phosphatase assay kit according to claim 18, wherein said substrate lipid is non-radioactively labeled and is immunobilized in wells of said multi-well assay plate.

20. (Cancelled) A lipid phosphatase assay kit according to claim 16, wherein said assay kit is used for detection of said target lipid in bodily tissue, blood, and serum samples.

21. (Cancelled) The lipid phosphatase assay kit according to claim 16, wherein said lipid detector protein is an antibody against said product lipid or a lipid recognition protein(LRP) with specificity for said product lipid.

22. (Cancelled) The lipid phosphatase assay kit according to claim 21, wherein said lipid recognition protein contains an affinity tag fusion with PH or other lipid-binding domains.

23. (Cancelled) The lipid phosphatase assay kit according to claim 18, wherein said assay is an enzyme linked immunosorbent assay (ELISA).

24. (Cancelled) The lipid phosphatase assay kit according to claim 18, wherein said substrate lipid is immobilized in wells of said multi-well assay plate.

25. (Cancelled) The lipid phosphatase assay kit according to claim 18, wherein said assay plate is coated with streptavidin, glutathione or Protein A.

26. (Cancelled) The lipid phosphatase assay kit according to claim 16, wherein said assay is an amplified luminescence proximity homogenous assay (ALPHA).

27. (Cancelled) The lipid phosphatase assay kit according to claim 16, wherein said assay is a fluorogenic assay selected from the group consisting of a fluorescence polarization (FP) assay, a fluorescence resonance energy transfer(FRET) assay and a time-resolved fluorescence resonance energy transfer(TR-FRET) assay.

28. (Cancelled) The lipid phosphatase assay kit according to claim 16, wherein additional lipids are present in said solution.

29. (Cancelled) The lipid phosphatase assay kit according to claim 16, wherein said lipid phosphatase acts on any PIPn and is a member selected from the group consisting of SHIP1, SHIP2, PTEN, PTPRQ, SKIP, Myotubularin, MTMR2 and OCRL1.

30. (Cancelled) The lipid phosphatase assay kit according to claim 16, wherein said substrate lipid is PI(3,4,5)P.sub.3, PI(3,4)P.sub.2, PI(3,5)P.sub.2, PI(4,5)P.sub.2, PI(3)P, PI(4)P, or PI(5)P.

31. (Cancelled) The lipid phosphatase assay kit according to claim 16, wherein said product lipid is PI(3,4)P.sub.2, PI(4,5)P.sub.2, PI(3,5)P.sub.2, PI(3)P, PI(4)P, PI(5)P, or Phosphatidyl Inositol.

32. (Original) A method for screening a disease caused alteration of a lipid phosphatase comprising the step of using the lipid phosphatase assay method of claim 1 to detect changes in the lipid phosphatase activity in bodily tissue, blood, or serum samples.

33. (Original) The method of claim 32, wherein the disease is non-insulin dependant, Type II diabetes.

34. (Original) The method of claim 32, wherein the disease is Cowden's disease or cancer.

35. (Cancelled) A method for screening a disease caused alteration of a lipid phosphatase comprising the step of using the lipid phosphatase assay kit of claim 16 to detect changes in the lipid phosphatase activity in bodily tissue, blood, or serum samples.

36. (Cancelled) The method of claim 35, wherein the disease is non-insulin dependant, Type II diabetes.

37. (Cancelled) The method of claim 35, wherein the disease is Cowden's disease or cancer.

38. (Original) A method for screening a compound having an enhancing or inhibiting effect on a lipid phosphatase comprising the step of using the lipid phosphatase assay method of claim 1 to detect changes in the lipid phosphatase activity.

39. (Cancelled) A method for screening a compound having an enhancing or inhibiting effect on a lipid phosphatase comprising the step of using the lipid phosphatase assay kit of claim 16 to detect changes in the lipid phosphatase activity.